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ABSTRACT

The order of acquisition of English grammatical morphemes by native-speaking children of Spanish, Cantonese, Tagalog, and Ilokano learning English as a second language between the ages of five and ten was investigated in a study involving 442 students. The acquisition patterns of these children were compared with those of monolingual English-speaking children acquiring their first language, and across the four languages. The results of the investigation suggest that young second-language learners acquire English grammatical morphemes in a different order than do children learning English as their first language. Factors such as semantic and grammatical complexity of the structures which are important to first language acquisition did not seem to be the primary factors for second language learning. Further, in an English-speaking environment, the order of acquisition of English structure by second-language learners reflected a high degree of commonality. The findings suggest a number of implications for linguistic content selection, teaching strategies, and procedures for second-language learners which should be considered in oral language and reading instruction. (FL)

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ORDER OF ACQUISITION: SAME OR DIFFERENT IN FIRST- AND SECOND-LANGUAGE LEARNING?

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Order of Acquisition: Same or Different in First- and Second-Language Learning?

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A doctoral study recently completed at The University of Texas at Austin investigated the order of acquisition of certain oral English structures by native-speaking children of Spanish, Cantonese, Tagalog, and Ilokano learning English as a second language (L2) between the ages of five and ten. The acquisition patterns of these children were compared with those of monolingual English-speaking children acquiring their first language (L1). Comparisons were also made among the second-language acquisition patterns of the four language groups. Results of the study revealed a low degree of correspondence between the acquisition patterns of L1 and L2 learners, but a rather high correspondence among those of the second-language learners. A discussion of the findings of the investigation will be the focus of this paper.

ORDER OF ACQUISITION: SAME OR DIFFERENT IN FIRST- AND SECOND-LANGUAGE LEARNING?

Is second-language learning like the first? Ervin-Tripp (1974), in addressing this question, postulated that

> ...in all second language learning we will find the same processes: overgeneralization, production simplification, loss of sentence-medial items, and so on. More detailed studies will be needed to find which aspects of acquisition change with age when learning contexts are identical, and which are sensitive to structural dissimilarities between L1 and L2, or differences in social milieu (p. 44).

She suggests that while certain processes and strategies appear to be the same for first- and second-language learning, differences do exist in the acquisition process which are attributable to the effect of age, native-language habits, or to the circumstances in which languages are learned.

Intensified study in recent years of the acquisition of language has produced a rather large body of literature and some significant advances in our understanding of the developmental processes involved in mother-tongue acquisition and of strategies children apparently use in evolving their first grammars. However, surprisingly little basic research into the processes and strategies of second-language learning has been conducted. Consequently, educational practices in second-language teaching are still based on extrapolations from general learning theories or from recent work in language performance and first-language acquisition. The question arises as to what extent is second-language learning similar to first-language acquisition.

Certainly, the circumstances under which the mother tongue is acquired and those under which additional languages are learned differ

vastly. The acquisition of verbal behavior normally takes place during infancy and early childhood, at a time in which the child is maturing physically and mentally, and is simultaneously acquiring many other skills and much other knowledge of the world about him. The language acquired during this period is that specific language (e.g., English, Spanish, Cantonese) which the child hears spoken within his home environment. That specific language acquired during infancy (i.e., the child's first language) is normally designated as the child's mother tongue. In the rare case of a child who acquires two or more languages fully during infancy and early childhood, each of the languages is said to be a mother tongue.

Verbal behavior, through the mother-tongue manifestations, emerges and develops along a rather rigid time line in all normal children, across various languages and cultures throughout the world. Apparently, the acquisition of the mother tongue is related to certain physiological and psychological changes of a qualitative nature that occur at a particular point in the maturational process. Lenneberg (1967) has suggested a "critical period" for language acquisition. He states:

> Language cannot begin to develop until a certain level of physical maturity and growth has been attained. Between the ages of two and three years language emerges by an interaction of maturation and self-programmed learning. Between the ages of three and the early teens the possibility for primary language acquisition continues to be good; the individual appears to be most sensitive to stimuli at this time and to preserve some innate flexibility for the organization of brain functions to carry out the complex integration of sub-processes necessary for the smooth elaboration of speech and language. After puberty, the ability for self-organization and adjustment to the physiological demands of verbal behavior quickly declines. The brain behaves as if it has become set in its way and primary, basic language skills not acquired by that time, except for articulation, usually remain deficient for life (p. 158).

The notion of the "critical period" strongly suggests that the processes of first-language acquisition are intimately tied to stages of physiological development of the brain chemistry, and if language is not acquired during this period, it may be achieved only partially and obviously with a great deal more difficulty during later stages of growth. If, however, language is acquired (i.e., the child possesses verbal behavior), then there does not seem to be any physiological or psychological impediment to learning a second language, if the opportunity and motivation are present in the environment.

However, the learning of a second language normally takes place after the ages of three or four, when first-language acquisition is relatively complete (i.e., after the learner has already developed considerable communicative competence in his mother tongue). Therefore, some would argue, as does Corder (1973), that: (1) the learning of a second language does not depend on developmental processes related to developing brain chemistry, which is a requirement for first-language acquisition; and (2) learning a second language is not the same as acquiring language again. Accordingly, Corder maintains: "'Learning a second language,' after we have acquired verbal behavior (in its mother-tongue manifestation) is a matter of adaptation or extension of existing skills and knowledge rather than the relearning of a completely new set of skills from scratch" (p. 115).

It does not follow, however, that the processes involved in adapting or extending existing skills are necessarily different from those of first-language acquisition, inasmuch as the child, during the acquisition stages, is in a constant process of revising and extending his verbal

behavior. In this process, certain predictable linguistic behavior occurs (e.g., Brown, 1973; Slobin, 1967; McNeill, 1966). A similar phenomenon has been observed by researchers investigating second-language learning (e.g., Ervin-Tripp, 1973; Ravem, 1969; Dulay & Burt, 1974a). This has given rise to the view that certain aspects of second-language learning are similar and are related to first-language acquisition.

The main argument for assuming that the processes of first- and second-language learning are different is that the second-language learner is older; he has undergone qualitative changes in his learning abilities as a result of the maturation process. This maturation opens up a whole new range of learning strategies he did not possess before, and he is, therefore, no longer limited to the same strategies he used as an infant acquiring his first language.

While learning strategies resulting in telegraphic speech and over-generalization of rules have been observed in the learning process of both first- and second-language learners, we cannot conclude that this linguistic behavior was the result of an identical learning process occurring in botn of the learners; rather, we only can conclude that the surface results are the same. In the case of the first-language learner, who is exposed to one language only, the mother tongue and whatever innate notions of language he may have provide the only basis on which he can make hypotheses about the rule structure of the language he is attempting to acquire. The process and strategies employed, in this case, involve only intralingual considerations.

In the case of the second-language learner, who apparently also uses the evidence provided by the new language itself to establish the

rules of the target language, the child has an alternative source on which to draw. His grammar-forming mechanism already has acquired the rules of one language, and what he knows about the structure of that language is readily available to assist him in formulating the rules of the second language. Thus, the child's mother tongue also becomes evidence for him to consider when trying to determine the rules of the new language. In using this knowledge, the second-language learner employs processes and strategies which involve interlingual considerations.

Analyses of errors children make in second-language learning suggest that at times their hypotheses are drawn on the basis of their mother tongue structure, resulting in errors that are clearly based on interlingual considerations. At other times, their errors appear to be intralingual in nature, closely resembling those found in the speech of children acquiring that language natively. Selinker (1972) has identified five processes central to second-language learning, which he maintains account for the interlanguage utterances of second-language learners: (1) language transfer, (2) transfer-of-training, (3) strategies of second-language learning, (4) strategies of second-language communication, and (5) overgeneralization of "target language" linguistic material. Only one of the above, overgeneralization of "target language" linguistic material, is applicable to first-language acquisition. While observations such as these above provide a framework within which errors can be discussed, they do not contribute greatly to our understanding of what it is in the learning process that determines which of the applications of a learning strategy the learner will employ, nor do they offer conclusive evidence that the relationship between first- and second-language learning is more than just a superficial one.

Research is needed that focuses on identifying, on the one hand, those aspects of language learning that remain constant for both first-language acquisition and subsequent language learning, and, on the other, those that differ depending upon the circumstances surrounding the learning.

A study recently completed by this author at The University of Texas at Austin investigated the order of acquisition of English grammatical morphemes by native-speaking children of Spanish, Cantonese, Tagalog, and Ilokano learning English as a second language (L2) between the ages of five and ten. The acquisition patterns of these children were compared: (1) with those of monolingual English-speaking children acquiring their first language (L1), and (2) across the four languages.

The Study

Design

Four hundred and forty-two students, kindergarten through grade 4, from two school districts in the state of Washington were involved in the study. All the students were tested bilingually with the MAT-SEA-CAL Oral Proficiency Tests (Matluck, Mace-Matluck, 1974). From the language data obtained from the English edition of these tests, twenty-six test items containing ten grammatical morphemes for which first-language acquisition order had been established previously (Brown, 1973) were isolated for study.

On the basis of the mean percentage of correct responses, from a total of approximately 11,000 utterances in which the identified morphemes were expected to occur in obligatory contexts, rank orders of the

ten morphemes were obtained for groups of children as defined by the variable categories of home language background, grade, and English-language proficiency level.

To test seven hypotheses, the value of the Spearman rho rank difference correlation coefficient was computed for two sets of ranks: (1) with first-language acquisition order and (2) with each home language background. Where significant correlations were found, an analysis was made of the nature of the similarities and differences between the two sets of ranks.

Results

Results of the analyses that examined the relationship between first-language (L1) and second-language (L2) rank orders were as follows:

1. All correlations were nonsignificant on the basis of home language background. The value of the correlation coefficients ranged from .25 to .49.

2. Except for Spanish kindergarten, all correlations were nonsignificant on the basis of grade level. The value of the correlation coefficients ranged from .05 to .65. An inspection of the data revealed that the Spanish kindergarten L2 rank order differed from the L1 sequence in some important ways.

3. All correlations were nonsignificant on the basis of proficiency level, except for Cantonese Proficiency Level I.[1] The value of the correlation coefficients ranged from -.15 to .64. An examination of the data revealed major differences between the L1 rank order and that obtained for the Cantonese-speaking Proficiency Level I students.

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[1]Proficiency levels were determined on the basis of total score on the English edition of the MAT-SEA-CAL Oral Proficiency Tests as follows: Level I, 30%-50%; Level II, 51%-70%; Level III, 71%-93%.

Results of the six analyses that examined the relationships between the L2 rank orders obtained on the basis of home language background revealed that:

1. All L2 rank orders correlated significantly. The value of the correlation coefficients ranged from .71 to .99.

2. Inspection of the data showed, however, that in spite of a high degree of correspondence, there were some major differences across all of the L2 rank orders, except for the Cantonese and Tagalog, where only one reversal occurred.

Discussion

Studies of first-language acquisition have shown that the order in which English morphemes are acquired by monolingual English-speaking children is largely invariant, and that the point of emergence and control of these morphemes is highly predictable on the basis of the length of the child's utterances (MLU), which correlates positively with chronological age. Brown (1973) has proposed that the primary determinants of first-language acquisition are semantic complexity and grammatical complexity, and that frequency of occurrence in the language and perceptual salience (e.g., phonetic substance, stress level, and usual serial position in a sentence) play only minor roles. He has been able to demonstrate that the L1 order of acquisition of 14 morphemes can be predicted on the basis of semantic and grammatical complexity orderings. Dulay and Burt (1974b), using Brown's orderings, attempted to predict the L2 order of acquisition of 11 morphemes by their combined Spanish and Chinese sample. The predictions were not borne out. Thus, since complexity appears to be a successful predictor for L1 but not for L2, it would seem that what affects the order in first-language acquisition are mainly developmental

factors related to age and cognitive growth.

For second-language learners, who are older and further along in their cognitive development and have already acquired highly complex structures in their native languages, other factors apparently become major determinants of the L2 order. Results of this study suggest that this is so. The L2 rank order of ten morphemes obtained for the children in this study, who were between the ages of five and ten, did not correlate significantly with the L1 rank order obtained by Brown, nor did age (as determined by grade level) affect, to any great extent, the rank ordering of the morphemes within home-language-background groups (see Table 1).

Similarly, rank orders obtained on the basis of home language background did not correlate significantly with Brown's L1 sequence (see Table 2). Rank orders obtained for children who speak non-Indo-European languages showed lower correspondence with the L1 sequence than for the native Spanish speakers for whom moderate relationships between L1 and L2 were evident for all rank orders except grade 3. Considering that both English and Spanish are Indo-European languages, similarities in the structure of the two languages may, to some extent, account for this moderate correspondence in the order of acquisition by both L1 and Spanish-speaking L2 learners. In addition, the non-Indo-European children in this study were, for the most part, of recent immigrant parents, whereas the Spanish were not. Therefore, it is reasonable to assume that the Spanish-speaking children have had wide exposure to English (in many cases, from infancy on). This long association with English could have had some influence on the order in which the English structures were

learned.

Interestingly, however, as can be noted in Table 3, the L2 rank orders obtained for groups of children as defined by home language background and proficiency level remained stable across proficiency levels. The stage the children were in in the acquisition process did not appear to influence the ordering of the morphemes. At Proficiency Level I, all morphemes were present in the data except for 3rd Person Irregular; only two morphemes, Present Progressive -ing and Copula, had reached or exceeded the 90% criterion for mastery; and the remaining six morphemes showed relatively low (14%-67%) group means. Each succeeding proficiency level showed a steady increase with all but four of the morphemes (Plural, Past Regular, 3rd Person Regular, 3rd Person Irregular) reaching at least 80% criterion by Proficiency Level III. This suggests that possibly the acquisition of English morphemes by second language learners occurs, not in a linear fashion as it does in first language learning, but rather in a global manner. That is to say that the learner gains some control of all, or most, of the morphemes in the early stages of learning and gradually refines his use of them as he gains in knowledge of how the language works. Should this be the case, this would have important implications for the sequencing of materials for language instruction.

That there is commonality in the L2 acquisition order of English structures is evident in the high degree of correlation that exists among the L2 rank order of the ten morphemes for children in this study who speak highly dissimilar mother tongues (see Table 4). This finding is neither new nor surprising, given the number of second-language acquisition studies that have reported essentially the same results, but it is

important for several reasons:

1. Data on children from yet another linguistic family (Austronesian-Indonesian Malay as represented by Tagalog and Ilokano), not previously studied, have been investigated and reported.

2. A multilingual population from yet another geographic region of the country has been studied.

3. Data have been collected through the use of yet another instrument (The MAT-SEA-CAL Proficiency Tests) for eliciting oral language performance.

Findings from each second-language acquisition study add to and strengthen the indication that there is a common order in which second-language learners in an English-speaking environment acquire English morphemes. This is important in and of itself, but as Roger Andersen (1977) has suggested, the leftovers from the data may be more nourishing than the main course. If a common order does exist, then a further analysis of the data may provide some indication as to the factors that determine or influence that common order.

Post-hoc analysis of the data (Mace-Matluck, 1978) suggest that (1) frequency of occurrence of the morphemes in adult native-speaker speech is a major determinant in the L2 rank order, but that perceptual salience is not; (2) syntactic category and morpheme type can account for the systematicity in the degree of accuracy with which L2 learners use English morphemes; and (3) native-language influence may explain the variance that occurs across L2 rank orders in the rate, and thus in the order, in which certain of the morphemes reach mastery criterion. Table 5 provides an analysis of the results of seven major studies of the L2 acquisition of English morphemes (Bailey, Madden, & Krashen, 1974; Dulay & Burt, 1974b; Fathman, 1975; Larsen-Freeman, 1975; Rosansky, 1976; Andersen, in

press; Mace-Matluck, 1977) in terms of possible determinants of the L2 order and permits a comparison of these orders with that of first-language acquisition.

Conclusions

Results of this investigation to date lead to the following tentative conclusions:

1. Young second-language learners acquire English grammatical morphemes in a different order than do children learning English as their first language. Factors that are major determinants in the L1 order of acquisition appear not to be the primary factors that determine the L2 sequence.

2. In an English-speaking environment, the order of acquisition of English structures by second-language learners will reflect a high degree of commonality. The structure of the native language affects the order of acquisition, but possibly to a lesser degree than do other factors.

Implications for Oral Language Development and Reading

These findings suggest a number of implications for oral language development and reading instruction.

Implication 1

Selection and programming of the linguistic content for second-language learners of English need not be made solely on the basis of semantic and grammatical complexity of the structures, since the child's needs for communication in the new language, his interests, and his level of mental maturity may be more salient factors.

Application to Reading. That oral language competence plays a significant role in the act of reading is well documented (Smith, 1971; Goodman, 1973; Stauffer, 1969). While some consideration must be given

to the level of oral competence the L2 learner brings to the reading task, this study suggests that criteria used to establish readability levels for the materials for monolingual English-speaking students (e.g., semantic and grammatical complexity) may not be appropriate for determining the readability index for ESL students. Materials which contain numerous structures that occur frequently in the language, regardless of their grammatical and semantic complexity, and that are stable and regular in the language may, indeed, prove to be the most effective materials for use in the early stages of reading in a second language.

Implication 2

Considering the learning capabilities of the L2 learner, it would appear that wide exposure to the language, coupled with structured lessons designed to expose the grammatical structure of English, would be a more efficient pedagogical practice than would wide exposure alone (which would leave to the learner the task of sorting out the rules of the new language from a random experience with it).

Application to Reading. It is argued that speech and writing are manifestations of the same language system. Goodman and Goodman (1977) state:

> Since the deep structure and rules for generating the surface structure are the same for both language modes, people learning to read may draw on their control of the rules and syntax of oral language to facilitate developing proficiency in written language. This is not a matter of translating or recoding print to sound and then treating it as a listening task. Rather, it is a matter of readers using their knowledge of language and their conceptualization to get meaning from print, to develop the sampling, predicting, confirming, and correcting strategies parallel to those they use in listening (p. 323).

This is not to say that spoken language and written language are the

same. Smith (1977) points out:

> Speech and print are not different languages; they share a common vocabulary and the same grammatical forms. But they are likely to contain different distributions of each (p. 391).

If, as the findings of the present study suggest, wide exposure to spoken English, accompanied by some structured learning, is indeed essential for children new to the language in order for them to extend and adapt their linguistic knowledge to include the rules for the spoken forms of their new language, then it would seem equally necessary that, prior to reading, L2 learners have wide exposure to hearing the written form of that language read to them. It is only through experience with the written language that children can gain knowledge of the distinctive characteristics of the written mode.

Implication 3

Second-language learners of English need not be segregated for instruction on the basis of home language background but, within the class, teaching strategies and procedures may be adjusted for individual or small groups of children of a particular language background in order to effect greater efficiency in the teaching of certain structures.

Application to Reading. Mastery of certain structures may not proceed at the same rate for groups of learners from different linguistic backgrounds. In addition, structures learned in one linguistic context may not necessarily be recognized nor interpreted correctly when met in a different context. While it is assumed that the child will learn a great many of the new structures in their oral forms and in relevant and familiar contexts prior to encountering them in their written forms,

reading teachers must be alert to differing rates of learning and to possible conflicting cultural interpretations of a particular word or phrase. For example, breakfast, meaning the first meal of the day, may give rise to a variety of conceptual imports that may cloud comprehension of the English phrase in which it may appear, depending on the nature of the institution within the reader's own culture.

Summary

In sum, speaking and reading are language activities. Language skills, be they those of production (speaking and writing) or those of reception (reading and listening) are inexorably entwined. It is only through an understanding of all aspects of language, and of the complex interrelatedness of the four skills, that a framework for a comprehensive theoretical model of the acquisition of language can be constructed. Knowledge of how a second language is learned (i.e., how primary linguistic skills are extended and adapted) must form a part of any comprehensive language theory.

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Table 1

A Summary of the Rank Orders and Correlation Coefficients Obtained for Groups of L2 Learners by Grade Level

	Cantonese						Spanish					Tagalog					Ilokano				
	Brown	K	1	2	3	4	K	1	2	3	4	K	1	2	3	4	K	1	2	3	4
Pres. pro. -ing	1	1	1	1	1	1	1	1	1	1	1.5	1	1	1	1	2	2	1	2	1.5	3.5
in, on	2	4	5	3	4	5	6	4	2.5	4.5	4	5	5.5	4	3	5.5	7	3.5	6	5	3.5
Plural	3	9	7	8	6	6	4	5	5	7	6	9.5	10	7	8	5.5	4	6	8	6	3.5
Past-irreg	4	5	3	5	2.5	4	3	3	2.5	4.5	3	2	5.5	5	5	2	9	8	6	3	3.5
Possessive	5	3	4	4	5	3	2	6	7	8	5	4	2	6	4	4	3	2	3	7	3.5
Articles	6	6	6	6	7	7	7	8	8	9	7	7	3	3	6	7	5	5	6	4	7
Past-reg	7	10	10	10	10	9	9	9	10	10	9	6	9	10	10	10	10	10	10	8	9.5
3rd Per-reg	8	8	8	7	8	8	8	7	6	3	8	8	8	8	7	8	6	7	4	9.5	8
3rd Per-irreg	9	7	9	9	9	10	10	10	9	6	10	9.5	5.5	9	9	9	8	9	9	9.5	9.5
Cont. copula	10	2	2	2	2.5	2	5	2	4	2	1.5	3	5.5	2	2	2	1	3.5	1	1.5	3.5
P-Value	--	.26	.39	.38	.51	.44	.65*	.48	.62	.11	.44	.35	.28	.37	.38	.40	.08	.46	.05	.38	.63

*Significant at .05 level of confidence

Table 2

The Rank Orders and Correlation Coefficients Obtained for Groups of L2 Learners: Cantonese, Spanish, Tagalog, Ilokano

L1 Rank Order		L2 Rank Order				
	Brown	Composite Gr.	Cantonese	Spanish	Tagalog	Ilokano
Pres. pro. -ing	1	1	1	1	1	2
in, on	2	4	5	4	5	5
Plural	3	7	7	5	7	6.5
Past-irreg	4	3	4	3	3	6.5
Possessive	5	5	3	6	4	4
Articles	6	6	6	8	6	3
Past-reg	7	9	10	9	10	9
3rd Per-reg	8	8	8	7	8	8
3rd Per-irreg	9	10	9	10	9	10
Cont. copula	10	2	2	2	2	1
P-Value	--	.45	.38	.49	.39	.25

Table 3

A Summary of the Rank Orders and Correlation Coefficients Obtained for Groups of L2 Learners by Proficiency Levels

	Brown	Cantonese			Spanish			Tagalog			Ilokano		
		I	II	III	I	II	III	I	II	III	I	II	III
Pres. pro. -ing	1	1	1	1	1	1	1	No students at this Proficiency Level in the sample.	1	1	2.5	1.5	1
in, on	2	3	4	5	5	6	4		7	4.5	7.5	4	5
Plural	3	7	7	7	2.5	3	6		8	8	7.5	6	7
Past-irreg	4	3	6	3	8	4	3		2.5	4.5	9.5	8	4
Possessive	5	7	3	4	4	5	5		5.5	3	2.5	5	3
Articles	6	3	5	6	6	7	8		4	6	6	3	6
Past-reg	7	7	9	10	9	10	9		5.5	10	4.5	9	10
3rd Per-reg	8	10	10	8	7	8	7		9.5	7	4.5	7	8
3rd Per-irreg	9	9	8	9	10	9	10		9.5	9	9.5	10	9
Cont. copula	10	5	2	2	2.5	2	2		2.5	2	1	1.5	2
P -Value	--	.64*	.38	.39	.46	.45	.47		.29	.34	-.15	.29	.38

*Significant at the .05 level of confidence

Proficiency Levels: I = 30% - 50%
II = 51% - 70%
III = 71% - 93%

Table 4

A Comparison of the Rank Orders and Correlation Coefficients Obtained between Groups of L2 Learners

	Spanish	Cantonese	Spanish	Tagalog	Spanish	Ilokano	Tagalog	Ilokano	Tagalog	Cantonese	Cantonese	Ilokano
Pres. pro. -ing	1	1	1	1	1	2	1	2	1	1	1	2
in, on	4	5	4	5	4	5	5	5	5	5	5	5
Plural	5	7	5	7	5	6.5	7	6.5	7	7	7	6.5
Past-irreg	3	4	3	3	3	6.5	3	6.5	3	4	4	6.5
Possessive	6	3	6	4	6	4	4	4	4	3	3	4
Articles	8	6	8	6	8	3	6	3	6	6	6	3
Past-reg	9	10	9	10	9	9	10	9	10	10	10	9
3rd Per-reg	7	8	7	8	7	8	8	8	8	8	8	8
3rd Per-irreg	10	9	10	9	10	10	9	10	9	9	9	10
Cont. copula	2	2	2	2	2	1	2	1	2	2	2	1
P-Value	.87*		.90*		.71*		.85*		.99*		.88*	

*Significant beyond the .01 level of confidence

Table 5

Implicational Orders*

FREE V, BOUND V, FREE NP AND BOUND NP MORPHEME IMPLICATIONAL ORDERS				
	FREE VERB ORDER	BOUND VERB ORDER	FREE NP ORDER	BOUND NP ORDER
ANDERSEN	COP-AUX-PaI	ING-PaR-3RD	THE-A	PLU-NsN
1 BMK 74	COP-AUX-PaI	ING —— 3RD	ART	PLU-NsN
2 DULAY-BURT 74b	COP-AUX-PaI	ING-PaR-3RD	ART	PLU-NsN
3 FATHMAN 75		ING —— 3RD	ART	PLU-NsN
4 LARSEN-FREEMAN I	AUX-COP —— PaI	ING —— 3RD	ART	PLU-NsN
75b (speaking) II	AUX-COP —— PaI	ING —— 3RD	ART	PLU-NsN
5 ROSANSKY (76)-GM (6 subjects)	COP-AUX-PaI	ING-PaR-3RD	ART THE-A (Jorge)	PLU-NsN
6 MACE-MATLUCK 77				
Cantonese	COP —— PaI	ING-3RD-3RDI-PaR	ART	NsN-PLU
Tagalog	COP —— PaI	ING-3RD-3RDI-PaR	ART	NsN-PLU
Ilokano	COP —— PaI	ING-3RD-PaR-3RDI	ART	NsN-PLU
Spanish	COP —— PaI	ING-3RD-PaR-3RDI	ART	PLU-NsN
KRASHEN'S NATURAL ORDER	COP-AUX-PaI	ING —— PaR / 3RD	ART	PLU-NsN
ADULT FREQUENCY	COP-AUX-PaI	ING —— 3RD-PaR	ART	PLU-NsN
MEAN L1 ORDER	PaI —— $COP_u AUX_u$ —— COP_c-AUX_c	ING-PaR-3RD	ART	PLU-NsN

*This is an expanded version of the implicational orders table in Roger Andersen, "An Implicational Model for Second Language Research" (in press), altered only to include the Mace-Matluck data.